

Injury risk and noise exposure in firefighter training operations

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SUPPLEMENTARY MATERIALS

Table S1. Questions used

A. Baseline survey

1. How would you describe your overall health?

☐ ₁ Poor ☐ ₂ Below Average ☐ ₃ Average ☐ ₄ Very Good ☐ ₅ Excellent

2. How would you describe your overall fitness?

☐ ₁ Poor ☐ ₂ Below Average ☐ ₃ Average ☐ ₄ Very Good ☐ ₅ Excellent

3. How would you describe your nutritional habits?

☐ ₁ Poor ☐ ₂ Below Average ☐ ₃ Average ☐ ₄ Very Good ☐ ₅ Excellent

4. Which types of tobacco products do you currently use? *CHECK ALL THAT APPLY*

☐ ₀ None ☐ ₁ Cigarettes ☐ ₂ Pipe
☐ ₃ Cigar ☐ ₄ Chew or snuff ☐ Other _____

5. How would you rate your hearing?

☐ ₁ Good ☐ ₂ A little trouble ☐ ₃ A lot of trouble ☐ ₄ Deaf or nearly deaf

6. Do you have any difficulties with your hearing?

☐ ₁ Yes ☐ ₀ No

7. How often are you exposed to high noise at work? *“High noise” means or loud enough that person has to raise their voice to talk to someone at arm’s length (about 3 feet away).*

☐ ₁ Never or almost never ☐ ₂ Less than half the time ☐ ₃ About half the time

☐ ₄ More than half the time

☐ ₅ Always or almost always

☐ ₆ Don't Know

B. Activity log

	Did you do this training today?	What time did this training start?	What time did this training end?	Did you wear hearing protectors?
a. Hand tools (hacksaw, reciprocating saw)	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₂ No	____:____ <input type="checkbox"/> ₁ AM <input type="checkbox"/> ₂ PM	____:____ <input type="checkbox"/> ₁ AM <input type="checkbox"/> ₂ PM	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₂ No
b. Stabilization Devices	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₂ No	____:____ <input type="checkbox"/> ₁ AM <input type="checkbox"/> ₂ PM	____:____ <input type="checkbox"/> ₁ AM <input type="checkbox"/> ₂ PM	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₂ No
c. Air Chisel	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₂ No	____:____ <input type="checkbox"/> ₁ AM <input type="checkbox"/> ₂ PM	____:____ <input type="checkbox"/> ₁ AM <input type="checkbox"/> ₂ PM	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₂ No
d. Spreader, combi tool (spreader/cutter)	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₂ No	____:____ <input type="checkbox"/> ₁ AM <input type="checkbox"/> ₂ PM	____:____ <input type="checkbox"/> ₁ AM <input type="checkbox"/> ₂ PM	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₂ No
e. Hydraulic tools	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₂ No	____:____ <input type="checkbox"/> ₁ AM <input type="checkbox"/> ₂ PM	____:____ <input type="checkbox"/> ₁ AM <input type="checkbox"/> ₂ PM	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₂ No
f. Cutting Torches	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₂ No	____:____ <input type="checkbox"/> ₁ AM <input type="checkbox"/> ₂ PM	____:____ <input type="checkbox"/> ₁ AM <input type="checkbox"/> ₂ PM	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₂ No
g. Patient removal	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₂ No	____:____ <input type="checkbox"/> ₁ AM <input type="checkbox"/> ₂ PM	____:____ <input type="checkbox"/> ₁ AM <input type="checkbox"/> ₂ PM	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₂ No
h. Victim disentanglement	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₂ No	____:____ <input type="checkbox"/> ₁ AM <input type="checkbox"/> ₂ PM	____:____ <input type="checkbox"/> ₁ AM <input type="checkbox"/> ₂ PM	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₂ No
i. Other (please list)	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₂ No	____:____ <input type="checkbox"/> ₁ AM <input type="checkbox"/> ₂ PM	____:____ <input type="checkbox"/> ₁ AM <input type="checkbox"/> ₂ PM	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₂ No

1. What noise level did you spend the most time in during your training activities today?

- ☐ ₁ Normal speaking voice or quieter ☐ ₂ As loud as a vacuum ☐ ₃ As loud as a motorcycle
☐ ₄ As loud as a chainsaw ☐ ₅ As loud as a siren or louder

2. Did you experience illness or physical discomfort today?.....☐ ₁ Yes ☐ ₂ No

a. IF YES, what time did this happen?.....____:____ ☐ ₁ AM ☐ ₂ PM

b. What were you doing when this happened? _____

3. Did you experience a narrow escape from injury today?.....☐ ₁ Yes ☐ ₂ No

a. IF YES, what time did this happen?.....____:____ ☐ ₁ AM ☐ ₂ PM

b. What were you doing when this happened? _____

c. Did this event startle or surprise you?☐ ₁ Yes ☐ ₂ No

4. **Did you have a minor incident today?**.....[]₁ Yes []₂ No
Examples of minor accidents would be breaking tool or piece of equipment, tearing your clothing, etc.
a. **IF YES, what time did this happen?**.....__:__ []₁ AM []₂ PM
b. **What were you doing when this happened?**_____

5. **Were you injured today at training?**.....[]₁ Yes []₂ No
This includes any injury, regardless of whether or not you needed or received first aid or medical treatment
a. **IF YES, what time did this happen?**.....__:__ []₁ AM []₂ PM
b. **IF YES, what type of injury did you get?** _____
Examples would be cuts, burns, sprains, puncture wounds, etc.
c. **IF YES, what body part was injured?** _____
d. **IF YES, what were you doing when this happened?** _____

Table S2. Noise exposures by day* of participation and activity within day (N=56 subjects)

	Day of participation											
	Tuesday			Wednesday			Thursday			Friday		
	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
L _{EQ} noise level (dBA)**	15	82.5	4.5	14	87.9	5.9	14	85.6	6.1	11	80.4	8.2
Training	15	85.7	3.6	14	90.6	7.4	14	90.5	5.5	10	88.9	8.3
Non-Training	14	77.5	6.3	14	74.2	5.6	14	73.3	8.7	11	74.1	4.5
Exercise	1	69.9	-	2	59.5	14.2	4	68.6	7.7	0	-	-
Sleep	12	54.6	11.7	12	54.2	9.1	5	51.9	5.4	8	50.7	3.3

* Monday excluded; measurements of noise begun on Monday appear under Tuesday and no injuries or near-misses were reported

**ANOVA, p<0.05